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ABSTRACT

One of five modules in the curriculum development series of the 16-module series designed to train vocational education curriculum specialists, this module is intended for use in classes or individual study arrangements at the preservice or inservice level by students with varying amounts of experience in vocational education. (These modules are revised versions of earlier study guides--see note.) Introductory materials include an overview, instructions to the learner, detailed list of behavioral goals and objectives, and resources needed to complete learning activities. The module is divided into three sections, each based on one of the goals. The first section discusses sources of instructional materials for use by vocational teachers. Focus of section 2 is judging quality of instructional materials for a variety of vocational student interests and abilities. Opportunity is provided for using typical evaluation and selection criteria, readability formulas, style manuals, and assessment instruments. The third section explains development of instructional materials that meet acceptable standards of production. Each section follows a standard format: text, individual study activities, discussion questions, and group activities. A summary of the module follows. Appendixes include suggested responses to the study activities, a self-check, responses to the self-check, and recommended references. (YLB)

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VOCATIONAL EDUCATION CURRICULUM SPECIALIST

SELECTING AND PREPARING INSTRUCTIONAL MATERIALS

Module 11

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a project to field test vocational education curriculum specialist materials

AMERICAN INSTITUTES FOR RESEARCH



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SELECTING AND PREPARING INSTRUCTIONAL MATERIALS

Module 11

Judith A. Appleby

Developed by the American Institutes for Research under support from the Office of Vocational and Adult Education, U.S. Department of Education. 1981.

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Introduction

The purpose of this module is to provide information and learning activities that will enable the vocational education curriculum specialist to select, design, and produce quality instructional materials. The selection or actual preparation of instructional materials is the culmination of intensive research and background work on the part of the specialist. This module takes the learner step-by-step through the materials development process, culminating with a small-scale materials development project.

This module assumes that you can already develop appropriate program goals, instructional objectives, and learning activities and that you can identify and use appropriate instructional strategies. These are topics covered in other modules in this series.

Overview

The first step in the materials development process is to search the field to determine if existing materials are already available to meet program needs. Goal 1 in this module provides an opportunity for the learner to become familiar with the vast resources already available to vocational educators. Discussed here is the communications network that has been established by state and federal governments, industry, and colleges and universities.

Goal 2 provides the learner with tools to assess and select quality instructional materials. Typical criteria used in the evaluation and selection of materials are presented, and the learner is given an opportunity to use readability formulas, style manuals, and assessment instruments that have proven successful in selecting appropriate instructional materials.

The third goal treats the development of new instructional materials that may be required when existing resources are inappropriate. Briefly explained here are the thinking, writing, and editing processes involved in developing effective written materials. Also discussed are the implications of copyright laws. Finally, the individual study activities for this goal provide the learner with an opportunity to develop materials and to have these materials evaluated.

Instructions to the Learner

The Self-Check items and possible responses to them are found in the appendices. These questions have two purposes. First, before you begin work on the module, you may use them to check quickly whether you have already learned the information in previous classes or readings. In some instances, with the consent of your instructor, you might decide to skip a whole module or parts of one. The second purpose of the Self-Check is to help you review the content of modules you have studied in order to assess whether you have achieved the module's goals and objectives.

You can also use the list of goals and objectives that follows to determine whether the module content is new to you and requires in-depth study, or whether the module can serve as a brief review before you continue to the next module.

Goals and Objectives

Goal 1: Identify sources of instructional materials for use by the vocational teacher.

Objective 1.1: List major sources from which instructional materials can be obtained.

Objective 1.2: Compile a list of materials sources for a specific curriculum planning and development area.

Goal 2: Judge the quality of instructional materials for a variety of vocational student interests and abilities.

Objective 2.1: Describe basic criteria for evaluating and selecting instructional materials.

Objective 2.2: Use a readability formula to determine the reading level of instructional materials.

Objective 2.3: Evaluate specific instructional materials, using a materials assessment form.

Goal 3: Develop a sample of educationally effective instructional materials that meets acceptable standards of production.

Objective 3.1: Explain the implications of copyright laws in the development of instructional materials.

Objective 3.2: Explain the processes involved in developing effective written materials.

Objective 3.3: Develop instructional materials to meet specific instructional objectives.

Resources

In order to complete the learning activities in this module, you will need information contained in the following publications:

Finch, C. R., & Crunkilton, J. R. Curriculum development in vocational and technical education: Planning, content, and implementation. Boston: Allyn and Bacon, 1979.

Mager, R. F., & Beach, K. M., Jr. Developing vocational instruction. Belmont, CA: Fearon Publishers, 1967.

GOAL 1: Identify sources of instructional materials for use by the vocational teacher.

Definition: Instructional Materials

Instructional materials, or curriculum materials, are any device or resource with instructional content or function that is used for teaching purposes. Such materials should not be confused with instructional strategies. Instructional materials are tangible resources used by the teacher and/or students, whereas instructional strategies are mainly approaches to teaching, where success depends heavily on the professional skills of the teacher.

Types of Instructional Materials

Instructional materials include printed matter, audiovisual materials, and manipulative aids.

Printed matter includes materials that rely mainly on reading for comprehension and includes such things as manuals, workbooks, pamphlets, study guides, reference books, standard textbooks, magazines, newspapers, and modules.

Audiovisual materials may involve seeing and hearing at the same time and usually require some type of equipment for their use. Such materials include pictures, graphics, posters, audiotapes, records, films, transparencies, filmstrips, film loops, slide series, and videotapes.

Manipulative aids are those that must be physically handled and include items such as puzzles, games, models, specimens, puppets/figures, learning kits, experiments, trainers, and simulators.

Sources of Instructional Materials

In order to successfully adopt, adapt, or develop curriculum materials, the vocational education curriculum specialist needs to know about the latest research and innovations in the

areas of curriculum and instruction in vocational education. When searching for relevant instructional materials, research reports, curriculum studies, and conference proceedings, the following sources should prove helpful:

- District: If you have access to a district whose program and size are similar to yours, this is the first resource you should consider. A visit with someone in this district who is already using instructional materials similar to those you wish to acquire should prove invaluable.
- State Department: Many teachers do not realize that their state department of vocational education probably has a specialist (state supervisor) assigned to assist local secondary and community college teachers in developing, implementing, and improving their curriculum. The state specialist is a person who has taught in and is recognized for having expertise in a specific subject area. Your district vocational director will have the name and phone number of the state specialist.
- University: Almost all states have at least one teacher training institution that specializes in the preparation of vocational teachers. These institutions can be excellent sources of assistance in developing curricula. In some instances, the teacher training institutions may even offer college or university credit to curriculum developers.
- Research Coordinating Unit (RCU): Most states have a Research Coordinating Unit (RCU) that funds vocational research and disseminates information you might use in designing curricula. The RCU in each state is usually located at the state department of education or a vocational teacher training institution.
- National Network for Curriculum Coordination: The National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE) is funded through contracts renegotiated periodically with the U.S. Department of Education. The goal of the NNCCVTE is to improve coordination of curriculum development and dissemination among the various states. It consists of six regional Vocational Curriculum Management Centers, each encompassing several states. State, regional, and national information searches can be initiated by contacting your state liaison representative or your Vocational Curriculum Management Center.

Listed below are the addresses of the six current regional centers.

Western Curriculum Coordination Center
College of Education
University of Hawaii
1776 University Avenue
Honolulu, Hawaii 96822

East Central Curriculum Coordination Center
100 North First Street
Springfield, Illinois 62777

Midwest Curriculum Coordination Center
Oklahoma State Department of Vocational
and Technical Education
1515 West Sixth Avenue
Stillwater, Oklahoma 74074

Southeast Curriculum Coordination Center
College of Education
Mississippi State University
Box 5365
Mississippi State, Mississippi 39762

Northeast Curriculum Coordination Center
Bureau of Occupational and Career
Research Development
Division of Vocational Education
New Jersey Department of Education
225 West State Street
Trenton, New Jersey 08625

Northwest Curriculum Coordination Center
Building 17 - Airdustrial Park
Olympia, Washington 98504

- Trade Associations: An excellent resource for curriculum materials and prices is professional or trade associations. The following list is limited to national vocational teacher associations:

Association for Supervision and Curriculum Development (ASCD)
1701 K Street, N.W.
Washington, D.C. 20006

American Vocational Association (AVA)
2020 N. 14th Street
Arlington, Virginia 22201

National Vocational Agricultural Teachers'
Association (NVATA)
Box 4498
Lincoln, Nebraska 68504

National Education Association (NEA)
1201 16th Street, N.W.
Washington, D.C. 20036

National Association of Vocational Homemakers
Teachers (NAVHT)
1510 H Street, N.W.
Washington, D.C. 20005

National Association of Industrial and Technical
Teacher Educators (NAITTE)
c/o Floyd Krubeck
Kearney State College
Kearney, Nebraska 68847

National Business Education Association (NBEA)
1906 Association Dr.
Reston, Virginia 22091

National Council of Local Administrators of Vocational
Education and Practical Arts (NCLA)
Trade & Technical Education
Board of Education, City of New York
66 Rugby Rd.
Brooklyn, N.Y. 11226

- Other Sources: The National Center for Research in Vocational Education (NCRVE) at Ohio State University distributes all of the following vocational education publications.
 - (1) The Centergram is a monthly newsletter which describes projects, products, and services at the NCRVE.
 - (2) FOCUS is a quarterly newsletter on native American vocational education.
 - (3) MEMO is a quarterly newsletter covering a wide range of dissemination and utilization issues, products, and techniques.
 - (4) VOCATIONAL EDUCATOR is a semi-annual tabloid featuring NCRVE products.

- (5) ERIC Clipboard is a quarterly newsletter on issues relating to adult career and vocational education in the ERIC system, one of the most comprehensive national compilations of information available.
- (6) Resources In Vocational Education (RIVE) is a bi-monthly publication which has four major sections. The document resume section contains vocational education materials and subject, author, and institution indices. The projects in progress section describes currently funded projects in vocational and career education administered by the state and federal governments. The dissertations in progress section announces ongoing vocational education research conducted at the doctoral level. The organizational resources section included directories of research coordinating units, curriculum coordinating centers, special associations, journals and magazines related to vocational education, and profiles of information systems.

Other sources of instructional materials, in addition to those already mentioned, include commercial publishers, journals and magazines, the U.S. Government Printing Office, the military, and major business and industrial firms.

Individual Study Activity

1. Compile a list of sources of instructional materials applicable in your particular curriculum planning and development area(s). State your reasons for selecting the sources.

Discussion Question

1. Discuss the issue of commercially-prepared instructional materials vs. instructor-prepared materials. Cite advantages and disadvantages of both types of materials. For example, commercially prepared materials often do not meet the specific instructional objectives established by the instructor. Because commercial enterprises are profit-oriented, their materials must appeal to a larger audience, thereby missing the specific needs of smaller groups. However, the instructor rarely has the time to prepare all of his or her own instructional materials and, for this reason, may need to rely on commercially prepared ones.

GOAL 2: Judge the quality of instructional materials for a variety of vocational student interests and abilities.

Selecting Instructional Materials

Before purchasing or developing instructional materials, the vocational education curriculum specialist must identify the criteria to be used in selecting appropriate instructional materials. A helpful resource are assessment instruments that establish the criteria by which the materials can be evaluated.

Assessment Criteria

Frequently used assessment criteria for printed materials and visual media are listed below. For printed materials, use the following criteria:

- Content: Does it closely follow the requirements of the tasks to be learned? What percentage of the total tasks can be covered with this resource? Are there serious omissions? Is the information outdated? Are minor points overemphasized?
- Level: Is the vocabulary written at a difficulty level similar to other print materials in that field for that age? Is the style readable?
- Format: Are there sufficient and clear illustrations? Is the binding, type, and paper appropriate for the intended usage?
- Authorship: Is the author a recognized authority? Has the publisher developed a sound reputation through previous publications?
- Treatment: Is there unbiased presentation of matters relating to labor, government, minorities, and controversial issues?

- Filing and Storage Ease: Can your facilities accommodate the materials?
- Cost: Is adequate funding available?

For visual media (film and videotape), use the following criteria:

- Content: Does it follow the requirements of the tasks to be learned? What percentage of the tasks can be covered with this resource? Are there omissions? Is there outdated information?
- Level: Is the material appropriate for the age level of the viewers? Is there sufficient action? Are the pacing and sequencing appropriate?
- Presentation: Is the material more effective than demonstrating, reading, discussing, or experimenting?
- Authorship: Are the producer and editor qualified?
- Technical Quality: Are images sharp? Is the color natural? Is sound intelligible and realistic? Is continuity natural and understandable? Are there conflicts between music and speech? Are there difficulties in following image and/or sound? Are image and sound synchronized?
- Filing and Storage Ease: Can your facilities accommodate the materials?
- Cost: Is adequate funding available?

A simple evaluation checklist for media is provided on the next page.

MEDIA EVALUATION FORM

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Greeley, Colorado

MEDIA TYPE:

16 mm film (initial contact) _____
16 mm film (accelerated) _____
program (initial contact) _____
program (accelerated) _____
programmed text _____
programmed film/filmstrip _____
filmstrip _____
tape-slide _____
video tape (tv) _____
8 mm loop _____
lab manual _____
lecture demonstration _____
audio tape _____
other _____

PRODUCER _____

TIME/LENGTH _____

COLOR/BW _____

	COMMENTS	RATING		
		Excellent	Good	Poor
PHOTOGRAPHIC QUALITY				
Picture quality	_____	☐	☐	☐
Photographic technique	_____	☐	☐	☐
SOUND QUALITY				
Tonal quality	_____	☐	☐	☐
Clarity	_____	☐	☐	☐
Ability of narrator	_____	☐	☐	☐
CONTENT				
Vocabulary level	_____	☐	☐	☐
Accuracy	_____	☐	☐	☐
Is material dated	_____	☐	☐	☐
Organization	_____	☐	☐	☐
Continuity	_____	☐	☐	☐
Educational aids used (models, etc.)	_____	☐	☐	☐
Level suitable for use	_____	☐	☐	☐
Does it achieve stated objective	_____	☐	☐	☐
GENERAL	☐ _____	☐	☐	☐
SPECIFIC	☐ _____	☐	☐	☐
COMMENTS:	_____			

Evaluated by	_____	Date	_____	

Criteria for the Selection and Evaluation of Instructional Materials for the Handicapped

The question of appropriate criteria for instructional materials for the handicapped was addressed by the former Special Education Instructional Materials Centers and Regional Media Centers Program (SEIMC/RMC Program), sponsored by the Bureau of Education for the Handicapped (BEH) from 1966 to 1974. The listing of criteria was continued by the Area Learning Resource Center, Specialized Office, and the National Center on Educational Media and Materials for the Handicapped Program (ALRC/SO/NCEMMH Program), also sponsored by BEH. The following Standard Criteria for the Selection and Evaluation of Instructional Materials are the result of the efforts of both programs.

These criteria were developed for application at two levels: teacher, for assistance in selecting and evaluating materials for individual learners; and national, for assistance in selecting and evaluating materials for groups of learners. (The two sets of criteria have been synthesized here.)

The criteria listed on the following pages are basic considerations essential to the appropriate selection and evaluation of instructional materials. The criteria may point to other statements or questions that may be used to identify instructional material appropriate for an individual learner. Users of the criteria are urged to investigate other instructional materials selection and evaluation criteria and/or systems and to be aware of local or state requirements, if any, for the selection and evaluation of instructional materials.

Standard Criteria for the Selection and Evaluation
of Instructional Material

(Prepared by the ALRC/SO/NCEMTH Program)

STAGE I. IDENTIFICATION OF NEEDS

The outcome of Stage I will be identification of the availability and adequacy of sources of need information prior to any selection of suitable instructional materials.

A. Sources

- ☐ 1. The National Needs Assessment sponsored by the Bureau of Education for the Handicapped
- ☐ 2. Consumers who are currently working with handicapped children
- ☐ 3. Analysis of curriculums and instructional priorities at learner level
- ☐ 4. Analysis of learner characteristics
- ☐ 5. Availability of appropriate materials for curricular areas
- ☐ 6. Availability of effective materials for learners

STAGE II. INITIAL SELECTION

The outcome of Stage II will be the identification of alternate pieces of instructional material which, on first screening, appear compatible with learner requirements and which will be considered for further review. Identification of alternate materials for examination will facilitate final selection decisions on a comparative basis.

A. Search

(The items listed below encourage the user to investigate various potential materials information sources and to consider essential points when gathering information about materials.)

Yes No NA

- ☐ ☐ ☐ 1. Is it a learner-use material?
- ☐ ☐ ☐ 2. Is it an instructor-use material?
- ☐ ☐ ☐ 3. Are all components of the material available?
- ☐ ☐ ☐ 4. Does the material have potential for use with the handicapped?
- ☐ ☐ ☐ 5. Is the material designed for use by the handicapped?

Yes No NA

- | | | | |
|--------------------------|--------------------------|--------------------------|---|
| ☐ | ☐ | ☐ | 6. Does the material appear to be easily usable by the handicapped? |
| ☐ | ☐ | ☐ | 7. Is the format of the material appropriate for the target handicapped audience? |
| ☐ | ☐ | ☐ | 8. Is the material of acceptable technical quality? |
| ☐ | ☐ | ☐ | 9. Does the material have instructional objectives? |
| ☐ | ☐ | ☐ | 10. Does the material appear to meet the curricular needs of the handicapped target population? |
| ☐ | ☐ | ☐ | 11. How does the cost of the material affect the accessibility to the material? |
| ☐ | ☐ | ☐ | 12. Does the material appear to present any physical danger to the target handicapped audience? |

STAGE III. REVIEW

The outcome of Stage III will be an in-depth analysis of an instructional material in order to match (Section D) the material for use with a specific student based on Section A, Learner Characteristics, Section B, Teacher Requirements, and Section C, Materials Characteristics. Implementation of this stage necessitates actual examination of the instructional material.

A. Learner Characteristics

(The following outline is intended to serve as a guideline to the selector of instructional materials in identifying the characteristics and educational requirements of the specific learner for whom material is being sought.)

1. What are the possible modes of input?

- | | |
|-----------------------------------|--------------------------------------|
| ☐ auditory | ☐ tactile |
| ☐ visual | ☐ kinesthetic |

2. What are the preferred modes of input?

- | | |
|-----------------------------------|---------------------------------------|
| ☐ auditory | ☐ kinesthetic |
| ☐ visual | ☐ multisensory |
| ☐ tactile | |

3. What are the possible modes of response?

- | | | |
|---------------------------------|----------------------------------|----------------------------------|
| ☐ verbal | ☐ written | ☐ gesture |
|---------------------------------|----------------------------------|----------------------------------|

4. ☐ What is the learner's instructional level?
5. ☐ What is the learner's interest level?
6. ☐ What is the learner's reading level?
7. ☐ What are the learner's interest areas?
8. What are the learner's interest/motivation requirements?
 - a. ☐ use of a game-type format
 - b. ☐ use of humor
 - c. ☐ use of a variety of stimuli
 - d. ☐ use of suspense
 - e. ☐ use of novelty
 - f. ☐ use of an interaction system of immediate feedback
 - g. ☐ use of cartoon format
 - h. ☐ use of puppets
 - i. ☐ use of characters
9. ☐ What are the learner's entry-level skills?
10. ☐ What are the learner's reinforcement requirements?

B. Teacher Requirements

(The following outline is intended to serve as a guideline to the selector of instructional materials in identifying the requirements to allow a teacher/instructor to use the material effectively.)

1. ☐ Are a teacher's manual and/or instructions provided?
2. If a teacher's manual and/or instructions are provided, does it include:
 - a. ☐ philosophy and rationale
 - b. ☐ statement of objectives
 - c. ☐ statement of instructional and interest levels
 - d. ☐ statement of reading level
 - e. ☐ statement of prerequisite skills

- f. ___ listing of material/program elements
- g. ___ listing of required materials and equipment
- h. ___ suggestions for teacher/instructor use
- i. ___ suggestions for student/learner use
- j. ___ suggestions for instructional alternatives
- k. ___ suggestions for evaluation
- l. ___ suggestions for additional resources

3. Instructor time requirements:

- a. ___ training
- b. ___ preparation
- c. ___ use
- d. ___ clean-up

4. What is the degree of instructional staff involvement?

<u>Full-time</u>	<u>Part-time</u>	<u>None</u>	
_____	_____	_____	a. teacher
_____	_____	_____	b. aide
_____	_____	_____	c. parent
_____	_____	_____	d. peer

5. Is the material practical?

<u>Yes</u>	<u>No</u>	<u>NA</u>	
___	___	___	a. maneuverability
___	___	___	b. ease of storage
___	___	___	c. number of parts
___	___	___	d. identification of parts
___	___	___	e. size of parts
___	___	___	f. storage/organization of parts
___	___	___	g. durability of product and packaging

Yes No NA

— — — h. replaceability of consumable and nonconsumable parts

— — — i. use of specialized equipment

6. Is the total cost reasonable?

Yes No NA

— — — a. inservice training

— — — b. initial cost

— — — c. per use cost (replacement of consumables)

— — — d. required supplementary materials costs

— — — e. replacement cost (replacement of nonconsumables)

7. — — — Is the material appropriate for the curriculum?

8. — — — Has this material been field tested?

9. — — — If so, has it been found to be effective?

C. Materials Characteristics

(The following outline is intended to serve as a guideline to the selector of instructional materials in identifying specific characteristics a material requires to allow for communication with a learner.)

1. Technical quality

a. Quality of auditory presentation: Acceptable Unacceptable

(1) clarity (easily understood, recording quality good)

— —

(2) amplification

— —

(3) voice level

— —

(4) dialect/accent

— —

(5) voice speed

— —

(6) voice quality

— —

(7) sequence

— —

	<u>Acceptable</u>	<u>Unacceptable</u>
(8) quality of narration (reader style)	—	—
(9) music/sound/voice mixing	—	—
b. Quality of visual presentation:		
(1) sharpness	—	—
(2) color	—	—
(3) distracting elements	—	—
(4) complexity	—	—
(5) size relationships	—	—
(6) sequence	—	—
(7) subjective angle (learner point of view)	—	—
(8) objective angle (observer point of view)	—	—
(9) composition (visual format, visual arrangement)	—	—
(10) figure-ground definition	—	—
c. Quality of print and graphic presentation:		
(1) legibility (style and size)	—	—
(2) captioning (location and pacing)	—	—
(3) clarity of print (contrast)	—	—
(4) accuracy	—	—
d. Quality of tactile presentation:		
(1) braille	—	—
(2) tactile drawings	—	—
(3) texture	—	—

	<u>Acceptable</u>	<u>Unacceptable</u>
(4) composition (physical format, physical arrangement)	—	—
(5) manipulables	—	—

2. Instructional quality

<u>Yes</u>	<u>No</u>	<u>NA</u>	
—	—	—	a. Does the selection of subject matter facts adequately represent the content area?
—	—	—	b. Is the content presented in the material accurate?
—	—	—	c. Is the content logically sequenced?
—	—	—	d. Is the content organized for ease of study?
—	—	—	e. Are various points of view, including treatment of minorities, handicapped, ideologies, personal and social values, sex roles, etc., objectively represented?
—	—	—	f. Are the objectives of the material clearly stated?
—	—	—	g. Is the content of the material consistent with the objectives?
—	—	—	h. Are the prerequisite skills for use of the materials stated?
—	—	—	i. Are essential subskills required included in the instructional sequence?
—	—	—	j. Is the reading level of the material stated?
—	—	—	k. Is the vocabulary systematically introduced?
—	—	—	l. Is the vocabulary consistent with the stated reading level?
—	—	—	m. Is the instructional level stated?
—	—	—	n. Is the interest level stated?
—	—	—	o. Is the material self-pacing?
—	—	—	p. Does the material provide for frequent reinforcement of major concepts?
—	—	—	q. Does the material summarize and review major points?

Yes No NA

- | | | | |
|---|---|---|---|
| — | — | — | r. Does the material provide frequent opportunities for active student involvement and response? |
| — | — | — | s. Does the material provide for evaluation of user performance? |
| — | — | — | t. Does the material provide criterion-referenced assessment? |
| — | — | — | u. Are all of the supplementary materials needed for instruction included in the materials package? |

D. Matching Material to Learner

(The following questions require a synthesis of information gained from Stage III, Review. The synthesis is essential before proceeding to Stage IV, Decision.)

Yes No NA

- | | | | |
|---|---|---|---|
| — | — | — | 1. Are stated objectives and scope of the material compatible with learner's need? |
| — | — | — | 2. Are prerequisite student skills/abilities needed to work comfortably and successfully with the material specified and compatible with the learner's characteristics? |
| — | — | — | 3. Are the skills and abilities needed by the instructor to work effectively with the material specified and compatible with the instructor's expertise? |
| — | — | — | 4. Are levels of interest, abstraction, vocabulary, and sentence structure compatible with characteristics of the learner? |
| — | — | — | 5. Is the degree of required teacher involvement (constant interaction, supportive or monitoring role, largely student directed, variable) compatible with teacher resources and learner characteristics? |
| — | — | — | 6. Does the material incorporate motivational devices to sustain student interest which are appropriate to the learner's characteristics? |
| — | — | — | 7. Are input and output modalities (visual, auditory, motor, tactile) compatible with learner characteristics? |
| — | — | — | 8. Is the demonstration of task mastery (e.g., written test, performance test, oral test) compatible with or adaptable to intended learner's characteristics? |

Yes No NA

- | | |
|--------------------|--|
| ____ ____ ____ | 9. Is the format of the material (e.g., game, book, filmstrip, etc.) compatible with the learner's mental and physical abilities? |
| ____ ____ ____ | 10. Is the durability and safety of the material adequate for the learner? |
| ____ ____ ____ | 11. Is information provided indicating (successful) field testing of the material with students similar in learning characteristics and interests to those of the learner? |

STAGE IV. DECISIONS

The outcome of Stage IV will be a final determination of material suitability for use in a specific learning situation. Individualisation of the decision making, based on items of priority concern, is implicit in this process.

After the review process, it was found that the material was:

Yes No NA

- | | |
|--------------------|--------------------------|
| ____ ____ ____ | needed by the learner |
| ____ ____ ____ | usable with the learner |
| ____ ____ ____ | usable by the instructor |
| ____ ____ ____ | effective |

Decision to:

- A. Use
- B. Adapt
- C. Field Test

can be made by identifying from the review data responsiveness of the material to learner need, usability with the learner, usability by the instructor, and effectiveness.

Directions: For each criterion met, place a "+" in the appropriate box. For each criterion not met, place a "-" in the appropriate box. If no information is available, place an "NI" in the appropriate box.

Needed	Usable with Learner	Usable by Teacher	Effective

Match your review summary with the decision matrix below:

D. Recommendations

N	UL	UT	E
+	+	+	+
+	+	+	-
+	+	+	NI
+	+	-	+
+	+	-	-
+	-	-	-
+	-	+	-
+	-	+	+
+	-	+	NI
-	+	+	+
-	-	+	+
-	-	-	+
-	-	-	-
-	-	-	NI

Recommend for:

U = Use/make available for use/information dissemination

A = Adapt

U/FT = Use/Field Test

R/A/D = Reject/Adapt/Develop

R/A/D

R/A/D

R/A/D

R/A/D

R/A/D

R = Reject/not acceptable

R

R

R

R

STAGE V. EVALUATION

The outcome of Stage V will be a final judgment, either positive, negative, or inconclusive, as to the usefulness and effectiveness of the material with the learner in a given learning situation.

Yes No NA

- | | | | |
|---|---|---|---|
| — | — | — | 1. Does this material meet the requirements of the teacher?
(See teacher requirement section in review instrument.) |
| — | — | — | 2. Does this material meet the requirements of the learner?
(See learner characteristics section in review instrument.) |
| — | — | — | 3. Does this material lead to the attainment of the specified objectives? (See instructional quality section in the review instrument.) |
| — | — | — | 4. Does the technical quality of the material meet the requirements of the learner? (See technical quality section in review instrument.) |
| — | — | — | 5. Do the instructional qualities of the material meet the requirements of the learner? (See instructional quality section of review instrument.) |

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Using Readability Formulas

A number of procedures can be used to determine the reading level of instructional materials. Two of these procedures are described briefly below.

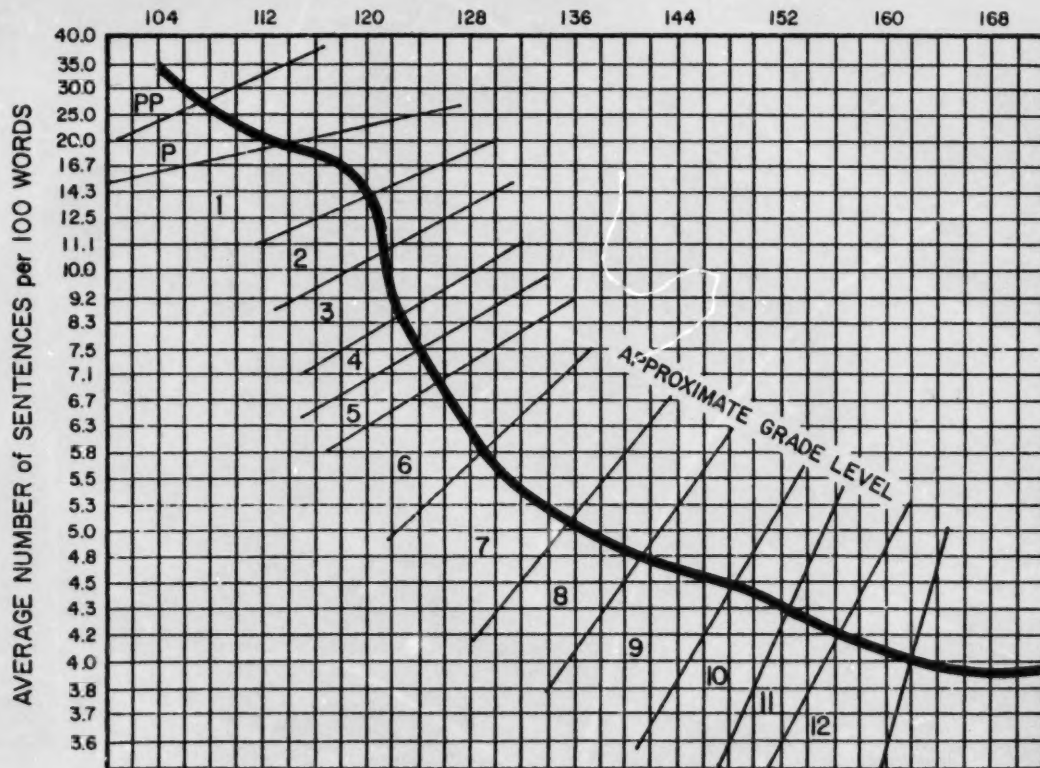
Fry's Readability Graph. The following steps indicate the procedures to follow when using Fry's Readability Graph to determine the reading level of materials.

- Select three 100-word passages from near the beginning, middle, and end of the book. Skip all proper nouns.
- Count the total number of sentences in each 100-word passage (estimating to nearest tenth of a sentence). Average these three numbers.
- Count the total number of syllables in each 100-word sample. There is a syllable for each vowel sound; for example: cat (1), blackbird (2), continental (4). Do not be fooled by word size; for example: polio (3), through (1). Endings such as -y, -ed, -el, or -le usually make a syllable, for example: ready (2), bottle (2). You will find it convenient to count every syllable over one in each word and add 100. Average the total number of syllables for the three samples.
- Plot on the graph (on the page following the example) the average number of sentences per 100 words and the average number of syllables per 100 words. Most plot points fall near the heavy curved line. Perpendicular lines mark off approximate grade level areas.

	<u>Example</u>	
	<u>Sentences per 100 words</u>	<u>Syllables per 100 words</u>
100-word sample, Page 5	9.1	122
100-word sample, Page 89	8.5	140
100-word sample, Page 160	7.0	129
	<u>3 24.6</u>	<u>3 391</u>
Average:	8.2	130

FRY'S READABILITY GRAPH

AVERAGE NUMBER of SYLLABLES per 100 WORDS



After plotting these averages on Fry's Readability Graph, you will find that they fall in the 5th-grade area; hence the book is about 5th-grade difficulty level. If great variability is encountered either in sentence length or in the syllable count for the three selections, then randomly select several more passages and average them in before plotting.

Gunning Readability Formula. When using this formula to obtain the reading grade level required to understand selected reading materials, follow the steps outlined below.

- Take systematic samples of 100 words.
- Divide number of words by number of sentences to get sentence length.
- Count the number of words of three or more syllables to get percentage of hard words.
- To get the Fog Index, total the two factors above and multiply by .4. (The Fog Index is the reading grade level required for understanding the material.)

For further information on readability formulas, consult the list of recommended references included in the appendices of this module.

Individual Study Activities

1. Read Chapter 8, "Identifying and Selecting Curriculum Materials," in Finch, C. R., & Crunkilton, J. R. Curriculum development in vocational and technical education: Planning, content, and implementation. Boston: Allyn and Bacon, 1979. Then select some type of available instructional material and evaluate it, using the "Curriculum Materials Assessment Form" provided in Appendix C of the book.
2. Having used the "Curriculum Materials Assessment Form" in Finch and Crunkilton and having reviewed the other forms in the module, develop a form of your own that would be particularly useful in your own local work setting.
3. Select a text or other available printed material. Use the readability formulas provided in Finch and Crunkilton and in this module to determine the reading level of the material you selected. How did the various formulas compare? Which formula would you use if you had to make the decision as a curriculum specialist? Why?

Discussion Questions

1. Discuss the various readability formulas. Which seems the most effective? Why would you select one over another?
2. Discuss the various materials assessment forms. Which seems most effective? Is a simple one more useful than a very detailed one? When would one be more appropriate than another?

GOAL 3

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GOAL 3: Develop a sample of educationally effective instructional materials that meets acceptable standards of production.

Developing Instructional Materials

Although the development of new instructional materials can be a costly and time-consuming process, this process may be necessary when no other materials exist or when available materials are of inappropriate quality or content for the intended audience. The information presented here is designed to familiarize you with the terminology and processes of instructional materials development. The design and preparation of new instructional materials is a systematic procedure based on thinking, writing, and editing.

Thinking

When organizing instructional content, the curriculum specialist will need to develop a course outline that takes into account:

- the background and capabilities of potential students,
- available instructional facilities and equipment, and
- the goals of instruction.

A course outline divides the course content into goals, units, and lessons.

The goal. The goals listed in the course outline should reflect the tasks required by the occupation for which students are to be trained. For example, a goal for nursing students might be to become familiar with medical terminology while a goal for a service station mechanic might be to understand how an automobile engine functions. The units and lessons listed in the course outline should be designed to teach the skills and knowledge that will lead students to develop the desired goals.

The unit. When developing instructional materials, goals are broken down into instructional units. A unit may cover several objectives. Units focus on central, content-oriented topics such as the "respiratory system" or the "automobile braking system" or on a basic competency such as "calculating fertilizer needs," "handling complaints," or "writing specifications." Unit titles should be concise and descriptive. Avoid titles that are too brief and consequently open to conjecture such as "pole timber," "transistors," "laws," or "monitoring."

Time considerations, equipment requirements, teacher expertise, and other factors may require that certain units be planned on the spot. Once the units have been delineated, the curriculum specialist or the teacher will develop lesson plans.

The lesson. Lessons are instructional divisions of a unit. The number of lessons per unit is influenced by the complexity and number of performance objectives per unit and by the level of proficiency required in the occupation for which the learners are being prepared. A good lesson plan:

- provides needed motivation,
- gives proper emphasis to the various parts of the lesson including those requiring student activity,
- ensures that all essential information is included,
- provides for the use of instructional aids,
- inserts questions at the proper time, and
- remains within a schedule.

Lesson plan formats vary from instructor to instructor. The important concern is that both instructor and student activity be reflected. The specificity of lesson plans also varies. Some instructors write a detailed plan; others prepare a few notes and a time schedule for use in the classroom. The lesson plan format on the following page is presented because it can help the instructor meet the above requirements for nearly all instructional activities.

LESSON PLAN OUTLINE

SECTION 1 - Unit

In a sentence or two, explain the unit of which this lesson is a part and where, in the context of the larger unit, it will be taught.

SECTION 2 - Instructional Objectives

State your objectives in writing. Remember, your objectives should be stated in behavioral terms and must be clear to your students.

SECTION 3 - Rationale

The rationale is a simple explanation or justification of why the learner needs to achieve the instructional objectives. Imagine a visitor asking, "Why are you teaching this at this time?" The rationale would be your response.

SECTION 4 - Content

Content includes facts, principles, or generalizations that are needed to achieve the instructional objective. The extent to which they are included in the lesson plan will depend on the experience and background of the teacher. At a minimum, this should be a "key word" checklist of the material to be taught, arranged in the order that you will teach it. This kind of checklist can save you and your students a great deal of misunderstanding and confusion if it is prepared and used carefully.

SECTION 5 - Instructional Strategies

The instructional strategies are methods used to involve the learner in activities that will lead to the achievement of instructional objectives. Although these may be considered teaching or teacher strategies and are teacher guided, learning will result only from activity of the learner. The strategies selected need to provide an opportunity for the learner to practice the behavior stated in the objective.

SECTION 6 - Evaluation Procedures

This part of your lesson plan should describe in detail the procedures you will follow in evaluating progress of the student and student performance at the conclusion of instruction. These procedures must relate to the conditions and criteria stipulated in the instructional objective at the beginning of the lesson. A word of caution: be sure you measure the behavior as stated in the objective and understood by the learner.

SECTION 7 - Materials and Aids

This should be a checklist of everything you plan to use in the lesson. The list should include audiovisual equipment, handouts, books, equipment, and lab materials.

Sequencing instruction. Units and lessons should:

- begin with relatively simple material and build toward complex or difficult material; and
- be adaptable to the developmental needs, capacities, and maturity levels of students.

Frequently, courses present students with fundamental knowledge and skills before introducing them to the tasks in which they will be using these skills and knowledge. This type of sequencing takes fundamental knowledge and skills out of the context of the tasks to which they are related. Consequently, the fundamentals become less meaningful to students and more difficult to learn.

An alternative to this type of course organization has been shown to reduce student failure rates. This alternative, called functional context sequencing, is characterized by the following instructional principles:

- The student is given a meaningful orientation to the entire job for which he or she is being trained.
- Instructional topics are organized so that the relevance of each to the whole job can be immediately demonstrated to the student.
- A whole-to-part sequence is followed in teaching the functions of equipment.
- Each student learns a graded series of job tasks. Each new task requires the student to master new knowledge and skills.

Regardless of the type of sequencing used, initial sequencing should be thought of as temporary. Sequencing will frequently need to be revised after materials are field tested.

Writing

The culmination of curriculum planning is the writing of all or part of the curriculum materials. All materials require some type of written communication--for example, instructions for games, a script for a slide-tape presentation, or an entire individualized instructional package. The importance of writing clearly and distinctly cannot be overlooked. During the writing stage, the materials developer might accomplish the following tasks:

- Prepare a first draft of the materials.
- Edit the first draft.
- Prepare a second draft.
- Pilot test the second draft.
- Prepare a third draft.
- Field test the third draft.
- Prepare the final draft.
- Duplicate the materials.

Editing

Just as important as the writing process is the editing process. All materials, printed or media, must go through a complete editorial process. Good writing and editing will make the difference between effective, usable instructional materials and those unable to meet the intended objectives. The editing process will vary from place to place, but a system of checks should be incorporated into all systems. The University of Chicago's A Manual of Style is a classic reference used by publishers across the country; it can be supplemented with literally thousands of other references on the editing process. Choose a system that meets the needs of your particular situation, but keep in mind these fundamental rules.

- The writer should never do his or her own substantive editing.
- The writer should be consulted concerning substantive changes.
- The editorial process should include copy and substantive editing.
- The original planning process should allow adequate time to complete the entire editing process.

In its Developmental Procedures, the Instructional Materials Center at the University of Texas at Austin describes its editorial process, as follows.

When the instructional materials specialist has completed the assignment and has determined that it is ready for editing, the material will go through these processes:

- (1) A review will be made of these key items:
 - (a) routine check of contents, organization, and suitability for learning;
 - (b) ease of learning; checking for compatibility of objectives and contents with questions, tests, and illustrations;
 - (c) factual accuracy (where information may be questionable or incredible); and
 - (d) copyright and fair use of material (checking footnotes and sources of information to see that there is no violation of copyright restrictions).
- (2) Substantive editing checks the contents completely for grammar, syntax, spelling, parallel structure, and form and makes certain that the material is correct to achieve what the writer intended. At this point, the readability analysis is made of the material. With this analysis, the editor reviews the material with the writer; minor changes in style and key words may be necessary to obtain the correct reading level.
- (3) Material is given to the writer for final review and consideration of notes and suggestions made by a review committee.
- (4) Manuscripts are sent to the printer for necessary publishing and production services. The printer is authorized to do mechanical or copy editing, typesetting, art, and graphic design. In the copy editing process, the editor is marking copy for typesetting, and deciding how the copy and illustrations will fit on the page. In this process, the editors are doublechecking the copy to catch any inconsistencies that have been overlooked. As the copy editors progress through the manuscript, they are authorized to call the writer and ask questions about anything that may not be apparent in the manuscript.

NOTE: It is the Policy of The University of Texas Instructional Materials Center that rewrite, other than simple rewording of a sentence or two, should be done by the writer rather

than the copy editor.* The reason is that rewrite at this stage is too costly and involves too many decisions to be left to the copy editor. It also consumes too much time.

Implications of Copyright Laws

Because you will be using other sources of information in the development of your own instructional materials, it is very important to be aware of copyright laws. It is very easy, in instructional materials development, to rely more heavily on one source than another. The danger lies in following any single source too closely. Knowing exactly what constitutes copyright infringement has always been open to debate and loose interpretation. For that reason, research has been done on the subject, and the following procedures and guidelines have been adopted by the University of Texas Instructional Materials Center.

Guidelines. The only person in a position to know the complete details on sources of materials is the writer. For that reason, commercial publishers often require each writer to clarify that his or her manuscript is original, suitably acknowledged and fairly used, or used with permission. Some publishing contracts go so far as to require writers to agree to pay the cost of copyright suits. It may also be possible to sue both writer and publisher for infringement. Even when there is no legal threat, fair use should be applied. Because of the mutuality of interests in avoiding practices that are unfair, the following should be adhered to:

- (1) Writers of instructional materials shall be primarily responsible for avoiding copyright difficulties.
- (2) Writers shall make it possible for an editor to double-check by:
 - (a) marking on the manuscript, in the margin, a reference to any source that has been quoted verbatim, or near-verbatim, for as much as 300 consecutive words (there shall be notations of where such material begins and ends);

* The writer may authorize minor changes in copy that do not change the intent or meaning of the contents. It is the writer's responsibility at this point to assume final authority for technical content accuracy. Mechanical editors may question any material or format that is not clear, or where clarification is needed as to the writer's intent.

- (b) providing notes with the acknowledgment to tell how much quoted material, and how many pictures or illustrations, come from each source;
 - (c) marking each source on every picture or illustration, and noting the permission later;
 - (d) if pictures or drawings have been traced, marking each tracing with a note to the artist to redraw in a different style, and noting on the tracing its original source;
 - (e) providing the editor with all the basic sources of materials at the time the manuscript is submitted for use in doublechecking.
- (3) When the writer has completed the manuscript and submits it for editing, a memorandum should accompany the manuscript that verifies the writer has:
- (a) marked all pictures that come from any source other than this department, indicated the source, and secured written permission;
 - (b) noted on any pictures or illustrations obtained by tracing or close copying that the artist is to redraw in a different style, and noted the original source,
 - (c) obtained written permission to use copyrighted material that is quoted verbatim for more than 300 consecutive words, properly acknowledged the same material, or marked it so that it can be acknowledged;
 - (d) checked to see that no single source has been quoted in the entire book for a total of as much as 1,000 words without permission being obtained, and the places of use marked so that suitable acknowledgment can be given;
 - (e) checked to see that the basic structure or outline does not follow too closely the approach used by another, copyrighted publication. (Under copyright law, the feature protected may be a unique method of presentation. A potential problem can be guarded against by not depending on other sources for outlines.)

- (4) When a writer feels that a manuscript has been completed, checked, and is ready for editing, a photocopy or carbon copy shall be retained, and the original will be used for editing. The photocopy or carbon will be used by the writer to determine the extent to which the writer and editor worked to avoid unfair use or copyright infringement. It will also be useful in locating sources of factual error; determining whether the original writing was clear, accurate, imaginative, and helpful in learning; and whether the work done by an editor has improved or harmed the manuscript.

Special problem areas. There are three special problem areas that you should understand:

- (1) U.S. Government publications that are not copyrighted may contain pictures or other material that are covered by copyright. Such material may carry a one-time, U.S. Government permit only.
- (2) Other copyrighted publications may have the same type of one-use only permission from the copyright holder. The copyright owner should be located and permission secured if there is doubt.
- (3) Where materials are not copyrighted, common law copyright laws apply, even to unpublished materials. Any author has the right to protect such material even if he or she has not applied for copyright.

Individual Study Activities

1. Read Chapter 9, "Developing Curriculum Materials," in Finch, C. R., & Crunkilton, J. R. Curriculum development in vocational and technical education: Planning, content, and implementation. Boston: Allyn and Bacon, 1979, for background on the materials development process and factors to consider in development. This will provide a foundation for the actual materials development you will do in the next activity.

2. Select a materials development project that is

- of interest and value to you and
- small in scope.

Here are a few examples:

- the script for a slide-tape presentation
- a study guide for a lesson or unit of instruction
- workshop materials
- a self-instructional package

Once you have selected your project, proceed as follows. (C)

- Develop the objectives that are to be achieved by your project.
- Write a brief purpose and rationale for the instructional materials you intend to develop.
- Develop the content, learning activities, and test items to assess student achievement of the objectives.
- After completing the preparation of the materials, put them through an editing process. Select two editors, one with knowledge of the subject matter and one without. Then answer these questions:

-What is the reading level of your materials?

-What editing process did you use? Did the process improve the reading level? Would further editing--substantive or copy editing--be of further value?

-What major changes resulted from the editing process?

-Was most of the editing substantive or copy editing?
What does this indicate to you?

-What was your reaction to the editing of your materials? If you had been working with a curriculum development team, what might have been their reaction to the editing process?

- Prepare a "dummy package" of your materials. Have all materials exactly as you want them--in order, pages numbered, cover designed, color and artwork indicated, etc. (Depending on your particular project, of course, this "dummy" will vary. In essence, it should be the final draft of your materials, ready for printing and duplication.) Use whatever references you need from the module appendix to assist you in this development process.

3. Read Chapter 10, "Sequencing Instructional Units," in Mager, R. F., & Beach, K. M., Jr. Developing vocational instruction. Belmont, CA: Fearon Publishers, 1967. Then complete the following multiple-choice questions by marking an "X" at the appropriate choice.

a. If instruction is organized to teach the skills most often used on a job, what type of sequencing does this represent?

- ☐ a. general to specific sequencing
- ☐ b. interest sequencing
- ☐ c. logical sequencing
- ☐ d. skill sequencing
- ☐ e. frequency sequencing
- ☐ f. total job practice

b. If instruction is organized to move from the big picture to the details, what type of sequencing does this represent?

- ☐ a. general to specific sequencing
- ☐ b. interest sequencing
- ☐ c. logical sequencing

- ☐ d. skill sequencing
 - ☐ e. frequency sequencing
 - ☐ f. total job practice
- c. If instruction is organized to present what "needs to be known" about a job and then followed by what is "nice to know" about that job, what type of sequencing does this represent?
- ☐ a. general to specific sequencing
 - ☐ b. interest sequencing
 - ☐ c. logical sequencing
 - ☐ d. skill sequencing
 - ☐ e. frequency sequencing
 - ☐ f. total job practice
- d. If an instructor is faced with a particularly unmotivated group of students, what type of instructional sequencing would be most appropriate?
- ☐ a. general to specific sequencing
 - ☐ b. interest sequencing
 - ☐ c. logical sequencing
 - ☐ d. skill sequencing
 - ☐ e. frequency sequencing
 - ☐ f. total job practice
4. Before beginning this activity, read sections that explain the component parts and structure of curriculum in publications listed in the Resources and Recommended References sections of this module. You may also refer to curriculum texts you have previously used or locate additional references through available library resources.

The purpose of this activity is to define the component parts of a curriculum. This may seem to be an easy task, but it is made difficult by the fact that educators are not consistent in their use of terms. On the following

pages are a number of terms and phrases used in curriculum. These can be organized into three categories that indicate a similar element or component part of curriculum. These three groups answer the questions:

- What is to be accomplished or achieved? (goals, objectives)
- How can this be achieved? (learning activities)
- How will we know when we have achieved it? (evaluation strategies)

Organize the terms and phrases on the following pages into these three categories.

Group Activity

1. Have each member of a small group collect a sample of a lesson plan. Evaluate the plan on the basis of content. Does it contain all the essential elements of a good lesson plan? Discuss what you would recommend to improve it.

LABORATORY	PERFORMANCE GOAL
METHOD	ACTIVITY
COMPETENCY	ENABLING ACTIVITY
EVALUATION	OBJECTIVE
COOPERATIVE EXPERIENCE	GRADING
INDIVIDUALIZED INSTRUCTION	INSTRUCTIONAL STRATEGIES

THESE SHOULD BE DUPLICATED AND CUT APART TO MAKE A SET OF "CARDS" TO BE SORTED INTO CATEGORIES.

OUTCOME	AIM
INSTRUCTION	STUDENT PROJECT
FEEDBACK	TESTS
WORK EXPERIENCE	ASSIGNMENT
ASSESSMENT	PURPOSE
BEHAVIORAL OUTCOME	CLINICAL PRACTICE

THESE SHOULD BE DUPLICATED AND CUT APART TO MAKE A SET OF "CARDS" TO BE SORTED INTO CATEGORIES.

COST-BENEFIT ANALYSIS	LEARNING ACTIVITY
TRADE ANALYSIS	CRITERION TEST
GOAL	LEARNING TASK
FOLLOW-UP	LEARNING EXPERIENCE
JOB ANALYSIS	BEHAVIORAL OBJECTIVE
PROFICIENCY STEPS	DEMONSTRATION

THESE SHOULD BE DUPLICATED AND CUT APART TO MAKE A SET OF "CARDS" TO BE SORTED INTO CATEGORIES.

Summary

In this module you learned about the process of developing instructional materials--tools or devices with instructional content that are used for teaching purposes. These tools may take the form of printed matter, audiovisual materials, or manipulative aids. You learned about the variety of sources from which existing materials can be obtained and how to select quality materials to meet your needs. You had practice in using readability formulas to determine the reading level of instructional materials, and you also used a Materials Assessment Form to evaluate the bias, accuracy, appropriateness, verbal and visual fluency, usefulness and versatility, filing and storage ease, and cost of instructional materials.

As an individual study activity, you developed your own instructional materials, learning about the many stages in the process from preparing the first draft, to testing and revising, to final duplication. You learned about the essential details of editing, a time-consuming task aimed at improving the overall product. Finally, you became aware of the care you must take in using other references in your materials because of possible copyright infringements.

The materials development process is a costly and time-consuming process. If any materials are already in existence and they might be appropriate for a specific instructional situation, it is more cost effective to use them than to develop new ones.

APPENDICES

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Self-Check

GOAL 1

1. As a vocational education curriculum specialist, what information sources would be available to you for the most up-to-date instructional materials related to those areas under your supervision? List as many as possible.
2. By what criteria would you decide whether or not to buy a commercially prepared sound filmstrip?

GOAL 2

1. Which of the following is not commonly used to determine reading levels?
 - ___ a. Number of quotations per 100 words
 - ___ b. Number of sentences per 100 words
 - ___ c. Number of syllables per 100 words
 - ___ d. Number of one-syllable words per 100 words
2. Which of the following is a widely used readability formula?
 - ___ a. Bennet's Readability Formula
 - ___ b. Gunning's Readability Formula
 - ___ c. Koffka's Readability Formula
 - ___ d. Strunk's Readability Formula

GOAL 3

1. Pictures and illustrations may be reprinted without permission if they are in:
 - ___ a. U. S. Government publications.
 - ___ b. Consumable instructional materials.

- ☐ c. Commercially produced filmloops.
 - ☐ d. None of the above.
2. Written permission is not required to reprint material that is:
- ☐ a. In the public domain.
 - ☐ b. In the second printing.
 - ☐ c. In the ERIC system.
 - ☐ d. Out of print.
3. Substantive editing refers to:
- ☐ a. Editing graphic design.
 - ☐ b. Editing content and grammar.
 - ☐ c. Copy editing.
 - ☐ d. Editing for grammar only.
4. What are the essential stages of the instructional materials development process?

Self-Check Responses

The answers that follow will give you an idea of the type of response expected. Use them as a study tool if you wish.

GOAL 1

1. This is only a partial listing and can be added to by the instructor:

Superintendent of Documents

U.S. Department of Education

U.S. Department of Labor

National Advisory Council on Vocational Education

State agencies

Educational Resources Information Center (ERIC)

Abstracts of Research and Related Materials in Vocational and Technical Education (ARM)

Abstracts of Instructional Materials in Vocational and Technical Education (AIM)

Research in Education (RIE)

Direct Access to Reference Information: A Xerox Service (DATRIX)

The National Center for Research in Vocational Education, Ohio State University

American Vocational Association

American Educational Research Association

Universities

Trade associations

Foundations, institutes, and societies

2. You might consider the following:

Photographic quality: picture quality, photographic technique.

Sound quality: tonal quality, clarity, ability of narrator.

Content: vocabulary level, accuracy, timeliness of material, organization, continuity, level suitable for use, achievement of stated objective, bias

GOAL 2

1. a
2. b

GOAL 3

1. d
2. a
3. b

4. The instructional materials development process consists of several stages. Once the needed materials are identified, the development stages include obtaining the references and resources needed, preparing the first draft, editing the first draft, pilot testing, revising, field testing, preparing the final copy, and duplicating.

Recommended References

1. A manual of style (12th ed.). Chicago: University of Chicago Press, 1969.
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VECS Module Titles

- Module 1: Vocational Educators and Curriculum Management
- Module 2: The Scope of Vocational Education
- Module 3: Organization of Vocational Education
- Module 4: Legislative Mandates for Vocational Education
- Module 5: Priorities in Vocational Education
- Module 6: Vocational Education for Students with Special Needs
- Module 7: Vocational Needs Assessment and Curriculum Development
- Module 8: Conducting Task Analyses and Developing Instructional Objectives
- Module 9: Selecting Instructional Strategies and Assessing Student Achievement
- Module 10: Relating Learning Differences and Instructional Methods
- Module 11: Selecting and Preparing Instructional Materials
- Module 12: Evaluating Vocational Education Curricula
- Module 13: Conducting Follow-Up Studies and Communicating Evaluation Results
- Module 14: Managing Vocational Education Programs
- Module 15: Preparing for Curriculum Change
- Module 16: Staff Development